CITY OF GRAHAM
2023-2024

ANNUAL PERFORMANCE REPORT
OF
WASTEWATER TREATMENT OPERATION AND COLLECTION

GENERAL INFORMATION

Facility/System Name: City of Graham Wastewater Treatment Plant

Responsible Entity: City of Graham

Person in Charge/Contact:
Tonya Mann, Utilities Director, at 336.570.6721
Cris Routh, Wastewater Plant Superintendent, at 336.570.6721
Kenny Hill, Distribution & Collection Superintendent, at 336.570.6721

Applicable Permit(s):	NPDES Permit:	NC0021211
	Non-Discharge Permit:	WQ0003824
	Collection System Permit:	WQCS00065

Description of Collection System and Treatment Process

The City of Graham operates a Public Owned Treatment Works consisting of a North Carolina Grade II Collection System and a North Carolina Grade IV Wastewater Treatment Plant.

The collection system operates under a North Carolina Division of Water Quality Collection System Permit and contains approximately 89 miles of piping and five lift stations. The lift stations are named Back Creek No. 2, Boyd Creek, Cherry Lane, Haw River, and Pyrtle Drive.

The wastewater treatment facility has a permitted flow of 3.5 million gallons per day (MGD). This facility consists of bar screens, grit collectors, primary clarification, extended aeration, final clarifiers, chlorination, post chlorination basin, de-chlorination, digestion, lime stabilization, sludge disposal, and laboratory. Effluent is discharged to the Haw River designated as Nutrient Sensitive Waters (NSW), which is part of the Cape Fear River Basin.

Performance

Text Summary of the System Performance for the Period of July 1, 2023 to June 30, 2024.

Collection System: The City of Graham collection system is a combination of gravity and forced mains. The city is proactive in monitoring and utilizing various methods to maintain the wastewater collection system. An education program is in place to inform water customers about the impact of improper disposal of Fats, Oils and Grease (FOG). Over 10% of the collection system is hydraulically cleaned annually. Chemical treatment, closed circuit inspection and rehab projects are just a few methods we implement to reduce and eliminate service outages and overflows. During the past fiscal year, the collection experienced no reportable wastewater overflows.

Lift Stations: The City of Graham operates five lift stations that are maintained by Collection and Distribution personnel. During this reporting period, the lift stations had no reportable sewer overflows.

Wastewater Treatment Plant: The City of Graham Wastewater Treatment Plant's permit has limits on Flow, Biological Oxygen Demand, Total Suspended Solids, Ammonia, Dissolved Oxygen, Fecal Coliform, Chronic Toxicity, and Total Phosphorus. Additional testing is performed for Total Residual Chlorine, Temperature, Conductivity, Copper, Mercury, and Zinc. Each month this data is reported to the state thru the electronic Discharge Monitoring Report (eDMR). The City is a member of The Upper Cape Fear River Basin Dischargers Coalition that performs monitoring upstream and downstream of our discharge point on the Haw River as well as other locations on the Haw and Deep Rivers. The Wastewater Treatment Plant had two reportable sewer overflows and sixteen exceedances of its NPDES permit.

Non-Discharge Permit: The City of Graham land applies biosolids to agricultural land under regulations of the Environmental Protection Agency and the State of North Carolina. The City of Graham had no violations in the past year.

Violations of permit conditions or other environmental regulations relating to water quality from the above areas

June 25 – July 1. **NPDES Permit:** The Wastewater Plant exceeded its weekly BOD average. The limit is a weekly average of 18.0 milligrams per liter (mg/L) of effluent. The City's average for the week was 25.7 mg/L. An upset of the plant was caused by excessive rainfall received the previous week. By the following week, the plant was back in compliance.

December 24-30, 2023. **NPDES Permit:** The Wastewater Plant exceeded its weekly Geometric Mean for Fecal Coliform. The limit is a geometric mean of 400/100 milliliters (ml) of effluent. The City's geometric mean for the week was 996.7/100 ml. A brief upset of the plant was caused by excessive rainfall on December 27. By the next week, the plant was back in compliance.

January 7-13, 2024. **NPDES Permit:** The Wastewater Plant exceeded its weekly TSS average. The limit is a weekly average of 45 mg/L of effluent. The City's average for the week was 49.0 mg/L. A brief upset of the plant was caused by excessive rainfall on January 10. By the next week, the plant was back in compliance.

January 9, 2024. Secondary Clarifier overflow: A reportable overflow of 1,813 gallons of untreated sewage spilled out of a secondary clarifier. The spill was the result of flows exceeding 14.5 MGD entering the Wastewater Treatment Plant due to heavy rain in the area. All equipment and alarms worked properly.

March 24-30, 2024. **NPDES Permit:** The Wastewater Plant exceeded its weekly BOD average. The limit is a weekly average of 36.0 milligrams per liter (mg/L) of effluent. The City's average for the week was >51.6 mg/L. A brief upset of the plant was caused by excessive rainfall on March 28. By the next week, the plant was back in compliance.

March 24-30, 2024. **NPDES Permit:** The Wastewater Plant exceeded its weekly TSS average. The limit is a weekly average of 45 mg/L of effluent. The City's average for the week was 116.05 mg/L. A brief upset of the plant was caused by excessive rainfall on March 28. By the next week, the plant was back in compliance.

March 27, 2024. Splitter Box overflow: A reportable overflow of 3,436 gallons of untreated sewage spilled out of a splitter box. The spill was the result of a secondary clarifier offline due to repairs and flows exceeding 8 MGD for over an hour entering the Wastewater Treatment Plant due to heavy rain in the area. All equipment in the adjacent clarifier and alarms worked properly.

March 2024. NPDES Permit: The Wastewater Plant exceeded its monthly Effluent TSS limit average. The limit is a monthly average of 30 mg/L. The City's average for the month of March was 47.75 mg/L. A brief upset of the plant was caused by excessive rainfall on March 28 resulting in an exceedance of our monthly limit.

April 14-20, 2024. **NPDES Permit:** The Wastewater Plant exceeded its weekly Ammonia limit average. The limit is a weekly average of 12 mg/L of effluent. The City's average for the week was 15.39 mg/L. The loss of a surface aerator in our Extended Aeration basin and inability to repair it due to ongoing plant expansion construction resulted in an exceedance of our weekly limit.

April 21-26, 2024. **NPDES Permit:** The Wastewater Plant exceeded its weekly Ammonia limit average. The limit is a weekly average of 12 mg/L of effluent. The City's average for the week was 16.1 mg/L. The loss of a surface aerator in our

Extended Aeration basin and inability to repair it due to ongoing plant expansion construction resulted in an exceedance of our weekly limit.

April 2024. **NPDES Permit:** The Wastewater Plant exceeded its monthly Effluent Ammonia limit average. The limit is a monthly average of 4.0 mg/L. The City's average for the month of April was 10.68 mg/L. The loss of a surface aerator in our Extended Aeration basin and inability to repair it due to ongoing plant expansion construction resulted in an exceedance of our monthly limit.

April 28-May 4, 2024. **NPDES Permit:** The Wastewater Plant exceeded its weekly Ammonia limit average. The limit is a weekly average of 12 mg/L of effluent. The City's average for the week was 13.7 mg/L. The loss of a surface aerator in our Extended Aeration basin and inability to repair it due to ongoing plant expansion construction resulted in an exceedance of our weekly limit.

May 5-11, 2024. **NPDES Permit:** The Wastewater Plant exceeded its weekly Ammonia limit average. The limit is a weekly average of 12 mg/L of effluent. The City's average for the week was 17.84 mg/L. Excessive rainfall received during the week along with the loss of a surface aerator in our Extended Aeration basin and inability to repair it due to ongoing plant expansion construction resulted in an exceedance of our weekly limit.

May 12-18, 2024. **NPDES Permit:** The Wastewater Plant exceeded its weekly Ammonia limit average. The limit is a weekly average of 12 mg/L of effluent. The City's average for the week was 15.85 mg/L. Excessive rainfall received during the week along with the loss of a surface aerator in our Extended Aeration basin and inability to repair it due to ongoing plant expansion construction resulted in an exceedance of our weekly limit.

May 15, 2024. NPDES Permit: The Wastewater Plant did not reach its daily Dissolved Oxygen requirement. The daily requirement is 5.0 mg/L of effluent. The City's reported result that day was 3.8 mg/L. Excessive rainfall received during the week along with the loss of a surface aerator in our Extended Aeration basin and inability to repair it due to ongoing plant expansion construction resulted inhibited the plant from meeting the Dissolved Oxygen requirement.

May 19-25, 2024. **NPDES Permit:** The Wastewater Plant exceeded its weekly Ammonia limit average. The limit is a weekly average of 12 mg/L of effluent. The City's average for the week was 14.14 mg/L. The loss of a surface aerator in our Extended Aeration basin and inability to repair it due to ongoing plant expansion construction resulted in an exceedance of our weekly limit.

May 2024. **NPDES Permit:** The Wastewater Plant exceeded its monthly Effluent Ammonia limit average. The limit is a monthly average of 4.0 mg/L. The City's average for the month of May was 12.89 mg/L. Numerous rainfall events along with the loss of a surface aerator in our Extended Aeration basin and inability to repair it due to ongoing plant expansion construction resulted in an exceedance of our monthly limit.

May 2024. **NPDES Permit:** The Wastewater Plant exceeded its monthly Effluent BOD limit average. The limit is a monthly average of 12.0 mg/L. The City's average for the month of May was 13.52 mg/L. Numerous rainfall events along with the loss of a surface aerator in our Extended Aeration basin and inability to repair it due to ongoing plant expansion construction resulted in an exceedance of our monthly limit.

SUMMARY

During this 12-month period, there were sixteen NPDES permit violations out of more than 2,400 sample results.

The City of Graham had two reportable sanitary sewer overflows of 1,000 gallons or more during this reporting period. The total gallons of overflow were 5,249.

Total gallons handled by the system were 700,550,000. Percent gallons overflowed are 5,249 divided by 700,550,000 x 100 = 0.000007 %. Therefore, the City of Graham achieved a 99.999993 % collection rate of all gallons discharged into the system, excluding any spills that were less than 1,000 gallons.

All sludge was land applied per Land Application Permit regulations with no permit violations.

Notification

A Public Notice was placed in a local newspaper informing the public that a copy of this report can be obtained at the City of Graham, City Hall located at 201 South Main Street, Graham, NC. Additionally, this report is also, available on the Internet at http://www.cityofgraham.com/

I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the users or customers of the named system and that those users have been notified of its availability.

_____ (Date) _____

Tonya Mann
Utilities Director
City of Graham